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ON THE SPECIES OF WHITE CHIMÆRA FROM JAPAN.

BY

DAVID STARR JORDAN

AND

JOHN OTTERBEIN SNYDER,

Of the Leland Stanford Junior University.

From the Proceedings of the United States National Museum, Vol. XXVII, pages 223-226.

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In a review of the Elasmobranchiate fishes of Japan by Messrs. Jordan and Fowler in these Proceedings,[a] the specimens of white *Chimæras* or Ginzame collected by Jordan and Snyder in Japan are all referred to *Chimæra phantasma.* A reexamination of the same material shows that two species are included by Jordan and Fowler under this head. One of these is the original *Chimæra phantasma* of Jordan and Snyder[b] from the market of Tokyo. The other is the *Chimæra phantasma* of Jordan and Fowler,[a] from a specimen from Sagami Bay.

The latter is a new species, and Dr. Bashford Dean tells us that he has proposed for it, in a paper still unpublished, the name of *Chimæra mitsukurii.* This name we accept in place of one devised by ourselves. The two smaller specimens mentioned by Jordan and Fowler[c] are the young of *Chimæra phantasma.* All the specimens of both species now extant came from Sagami Bay, off Misaki.

The synonymy and distinctive characters of the two species are given below. The accompanying figures are by Mr. W. S. Atkinson, that of *Chimæra phantasma* being from the original type, No. 49398, U.S.N.M.

1. CHIMÆRA PHANTASMA Jordan and Snyder.

Chimæra monstrosa Schlegel, Fauna Japonica, Poiss., 1850, p. 300, pl. cxxxii; Nagasaki (not of Linnæus).

Chimæra phantasma Jordan and Snyder, Proc. U. S. Nat. Mus., 1900, p. 338; Market of Tokyo; Coll. K. Otaki—Jordan and Fowler, Proc. U. S. Nat. Mus., 1903, p. 670; "two other specimens from Sagami Bay" (not description).

In this species the anal fin is sharply notched opposite the notch in the second dorsal fin, so that the anal is separated from the caudal. The dorsal spine is strongly serrated behind and perfectly smooth in

[a] Proc. U. S. Nat. Mus., XXVI, 1903, p. 669.
[b] Idem, XXIII, 1901, p. 338.
[c] Idem, XXVI, 1903, p. 670.

front. The claspers are trifid, their length beyond the point of division being equal to 4 times the diameter of the pupil. The lateral line has conspicuous undulations extending along the sides of the body. Below the eye it gives off 2 branches, the upper of which passes backward toward the gill opening, the lower extending forward below the eye. There are 9 enamel rods in each anterior lamina of the upper jaw.

Three specimens have been examined, the type, No. 49398, U.S.N.M., and two others in the Ichthyological Collections of Stanford University. The latter are females and do not differ from the type except in the sexual characters.

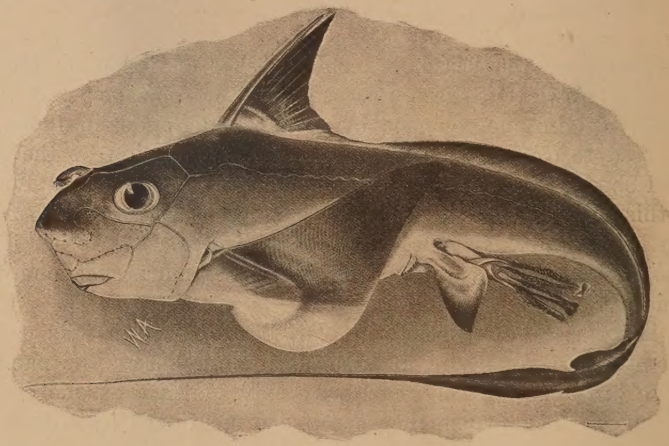

FIG. 1.—CHIMÆRA PHANTASMA.

2. CHIMÆRA MITSUKURII Dean Manuscript.

Chimæra phantasma JORDAN and FOWLER, Proc. U. S. Nat. Mus., XXVI 1903, p. 669. Description from a male specimen from Sagami Bay.

This species differs notably from *Chimæra phantasma* in the following points. There is no notch between the anal and caudal fins. The dorsal spine is finely serrated in front, and is smooth behind except near the tip, where it is finely serrated, the posterior edges appearing smooth, however, when compared with the serrated area of the spine of *C. phantasma*. The claspers are bifid, their length beyond the point of division being equal to about 1¼ times the diameter of pupil. The lateral line is straight along the side of the body. Below the eye it gives off 2 branches, the upper of which passes forward below the orbit. There are 6 enamel rods in each anterior lamina of the upper jaw.

The following is a more detailed description of our specimen of *Chimæra mitsukurii*, No. 7739, Ichthyological Collections, Stanford University.

Head measured from tip of snout to gill opening equal to the depth, contained $1\frac{1}{10}$ times in the dorsal spine; longitudinal diameter of eye equal to width of base of pectoral, $3\frac{1}{5}$ in length of dorsal spine. The eye is oblong, the longitudinal diameter of the iris contained 4 times in length of dorsal spine. Hook inserted on snout just anterior to the eye, its length slightly greater than the diameter of pupil. Anterior laminæ of upper jaw with sharp, sinuated edges; 6 enamel rods visible from before, the posterior of which is very short; posterior laminæ with rough edges, the enamel rods lying almost horizontally. Laminæ of lower jaw with about 11 enamel rods on each side, the cutting edges concave.

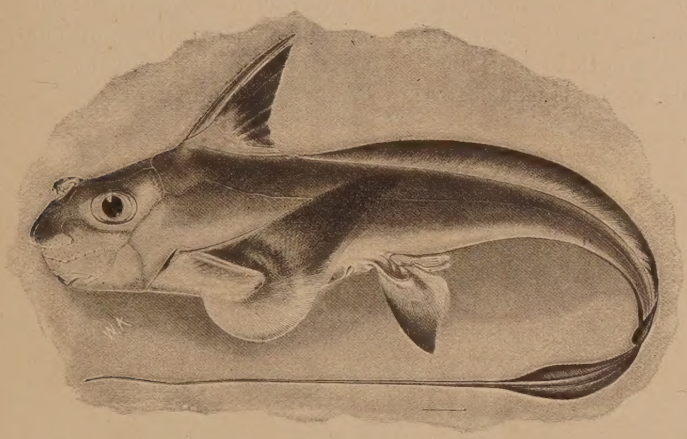

FIG. 2.—CHIMÆRA MITSUKURII.

Lateral line straight along the sides except for an abrupt upward curve below the dorsal spine and a gentle bend downward just posterior to the notch separating the dorsal and caudal; posterior to the eye it sends a branch upward, which divides, sending one part over the occiput to meet a similar line from the opposite side, and the other part forward above the eye, along base of hook, and downward to tip of snout, where it joins a deep groove with frilled edges; the second branch from the main lateral line passes downward and forward behind the eye, where it divides, the upper division extending forward below the eye, curving upward, then downward and backward to join the groove mentioned above; the lower division passes downward almost immediately dividing, one section running backward and downward, passing as a row of pores across the throat, the other section continuing downward and forward a short distance, finally splitting, one-half uniting with a groove which crosses the snout dividing above the mouth, the other half crossing the chin as a line of pores.

The dorsal spine is curved, acutely pointed, triangular in cross sec-

tion, grooved behind; anteriorly there is a serrated, narrow keel extending the length of the spine; posteriorly the edges of the spine are smooth, except near the tip, where they are minutely serrated. The rays are attached to the basal third of spine only, longest rays not reaching tip of spine. The dorsal fins are connected by a rayless fold of skin. Second dorsal separated from caudal by a notch. Anal and caudal continuous. Caudal filament very long and slender, the distance from the end (notch) of the dorsal to tip of filament equal to distance from end of dorsal to insertion of pectoral. Pectoral somewhat falcate, when depressed the tip reaching to middle of base of ventral. Length of ventral contained $1\frac{1}{2}$ times in dorsal spine. Claspers bifid, the length beyond point of division equal to $1\frac{1}{4}$ times the diameter of pupil. Four spines on ventral edge of intromittent organ.

Total length of specimen $29\frac{3}{8}$ inches with caudal filament.

This species is named for Dr. Kakichi Mitsukuri